Project Report
Alaska Public Broadcasting, Inc.
Project Number No. 174-05
October 1, 2010 – December 31, 2010

Project Title & Summary

Four project work scopes are embodied in this grant award. The majority of the award is dedicated to two broad infrastructure work scopes; Public Broadcasting Facilities & Equipment Modernization Project and Radio Digital Conversion.

Public Broadcasting Facilities & Equipment Modernization Project

The purpose of the Public Broadcasting Facilities & Equipment Modernization Project is to provide much needed capital revenue for addressing system-wide infrastructure and technology priorities. In 2004, a system-wide infrastructure and technology needs assessment, ranging from basic tools to new facilities, approximated $38 million. Total Denali Commission funding: $5,617,000.

Public Radio Conversion to Digital Transmission

Alaska's 26 public radio licensees are changing their primary transmission equipment to the new standard for digital broadcasting. Funding the appropriate needs for all of the stations cost approximately $4.1 million. The Corporation for Public Broadcasting (CPB) committed $2.5 million and the Rasmuson Foundation committed approximately $700,000 toward the total. This critical funding assured that the project had the resources to meet anticipated as well as unanticipated needs. Total Denali Commission funding: $895,000.

Digital Distribution Network

Public broadcasting data network interconnects all of Alaska's public radio and television stations by means of a digital intranet and the internet. This project was originally funded by the Denali Commission in FY04. The funding helped complete this project and provided for some maintenance. Total Denali Commission funding: $100,000.

Alaska Rural Communications Service (ARCS) & Satellite Interconnection Revitalization

Repair and replacement of existing broadcast infrastructure used to deliver public telecommunications services via radio and television to Alaskans all across the State. This project was originally funded by the Denali Commission in FY04. The funding helped complete this project. Total Denali Commission funding: $100,000.

Reporting Period: October 1, 2010 – December 31, 2010

Activity during the fourth quarter of 2010 occurred within the primary work scope: the facilities and equipment modernization project.

Facilities & Equipment Modernization Project – Capital Grant Program

Overall progress to date includes successful development and implementation of this capital grant program. APBI modeled the grant program after three well established programs which are familiar to public broadcasters in Alaska: the Rasmuson Foundation, the Corporation for Public Broadcasting, and the Public Telecommunications & Facilities Program, U.S. Dept. of Commerce. We focused on the Rasmuson Foundation approach while incorporating some good ideas from the other two entities. We sought a high degree of integrity and accountability throughout the development of the grant program.

Milestones reached since project inception:

<u>2005</u>

- Development of grant program concept and materials: overview, guidelines, priorities, procedures and panel review process, including development of application paperwork and administrative systems.
- Announcement of the Round I grant period occurred July 27, 2005. Applications were distributed electronically as well as via U.S. mail to all eligible entities. Deadline for the applications was September 30, 2005.
- A five person, independent grant panel met in Anchorage, October 16-17, 2005, to review Round I proposals and make recommendations resulting in seventeen projects being awarded $815,529 toward a total project cost of $1,228,990. Collectively, the stations funded 34% of the total project cost.
- The panel process went smoothly and produced a legitimate independent review of the proposals per the grant program priorities and guidelines. It was evident that the panel had read all proposals and had come to the meeting ready to identify and discuss the strengths and weaknesses of the proposals. Throughout the review, the APBI staff provided additional station and system information to the panel as requested.
- On October 26, 2005 the APBI board of directors approved the overall package of recommendations made by the panel and management. Round I award announcements were made October 31, 2005.

2006

- Announcement of the Round II grant period occurred March 10, 2006. Applications were distributed electronically as well as via U.S. mail to all eligible entities. Deadline for the applications was June 1, 2006.
- Round II received seventeen proposals requesting $998,290 in financial assistance toward total project costs of $1,170,232. Collectively, the stations funded approximately 15% of the total project cost. Five proposals were for facility improvements and twelve were for equipment.
- A five person, independent grant panel met in Anchorage, June 29-30, 2006, to review proposals and make recommendations. The panel recommended that eight proposals be funded with no conditions attached and six be funded with conditions attached. Three proposals were not funded although the panel recommended that the applicants be given an opportunity to resubmit their proposals in order to address panel concerns. All three proposals were resubmitted and awarded grants.

2007

- An update of the system wide assessment was completed in August, 2007. Although many needs have been met since the original assessment in 2004, the system reports approximately $36 million in unmet capital needs.
- Announcement of Round III of the grant program occurred August 17, 2007. Applications were distributed electronically to all eligible entities. Deadline for application was October 19, 2007. Sixteen proposals were received by the deadline requesting $916,371 toward a combined total project cost of $1,179,703. Collectively, the stations funded approximately 17% of the total project costs. The proposals were reviewed by a grant panel on November 15-16, 2007.
- Round III grant award announcements were made in early December, 2007. The panel recommended that five proposals be funded with no conditions attached and eight be funded with conditions attached. Three proposals were not funded although the panel recommended that the applicants be given an opportunity to resubmit their proposals in order to address panel concerns. One of the three proposals has been resubmitted and was awarded a grant following additional panel review.

2008

- Round IV was announced October 1, 2008. Deadline for application was December 10, 2008. Fourteen proposals were received by the deadline requesting $902,753 toward a combined total project cost of $1,016,831.

Collectively, the stations funded approximately 11% of the proposed total project costs.

2009

- Round IV grant panel met January 22-23, 2009 in Anchorage. Round IV grant award announcements were made in early February, 2009. The panel recommended that six proposals be funded with no conditions attached and six be funded with conditions attached. Two proposals were not funded although the panel recommended that the applicants be given an opportunity to resubmit their proposals in order to address panel concerns.
- Round V of the grant program was announced on August 14, 2009. Deadline for applications was October 23, 2009. The Round V grant panel met in Anchorage, November 13-14, 2009. The panel recommended funding for 14 station based capital projects; a total award of $808,782 toward a total combined project cost of $934,297. Collectively, the stations funded 13% of the total project costs. Project award announcements were made in mid December, 2009.

2010

- On March 31, 2010 the Denali Commission approved an extension to this project and the new deadline for project completion is December 31, 2011.
- Round VI of the grant program is likely to be the final grant round. Round VI was announced on July 16, 2010. Deadline for application was September 30, 2010. The Round VI independent grant panel met in Anchorage October 21-22, 2010.
- The panel recommended funding for 17 station based capital projects; a total award of $701,245 toward a total combined project cost of $799,230. Collectively, the stations funded 12% of the total project costs. Project award announcements were made in mid November, 2010.
- APBI continues to monitor grantee compliance for all projects from all previous rounds through quarterly reporting requirements. All projects will need to be completed by December 2, 2011.
- Since project inception, the Capital Grant Program has conducted six grant rounds awarding funds for 94 station based projects. The total combined cost of the 94 projects is $5,246,852. The Capital Grant Program share to date is $4,250,711 or 79% while the station total match to date is $1,094,485 or 21%.

Dynamic Carrier Control Project activity during the fourth quarter of 2010:

1. Introduction

    a. There are seven stations operating 10 KW AM transmitters in Alaska. They serve rural areas and have seen the electrical utility costs increase

dramatically the last few years. One of the transmitters is powered by on-site generators and diesel costs have skyrocketed. Costs are approaching $0.50/kilowatt hour. These transmitters consume 24 kilowatts at peak modulation. APBI has conducted research to help reduce the amount of power used by these installations.

2. Dynamic Carrier Control (DCC)

    a. This technology was developed in England and Europe in the 1980's. This method of modulation helps reduce the electricity cost. It is used all over the world with the exception of North America. This is because utility costs were low until recently. There is an FCC regulation forbidding this technology based on regulations which are now obsolete.
    b. APBI applied to the FCC for an Experimental Authorization to show that this technology could be applied without degradation of audio.

3. Current Project Status

    a. APBI received authorization from the FCC to proceed.
    b. DCC equipment for the experiments was provided by Harris Corporation and Nautel Corporation.
    c. The power analysis and logging equipment arrived.
    d. Testing of the new technology began in mid August.

KOTZ AM, Kotzebue, initial installation and test:

    a. Nautel Corporation thought that their DCC device would function on all manufacturers' transmitters that were capable of IBOC (In Band On Channel) digital broadcasting. All of our 10 KW transmitters are so capable. Our hope was that one unit would work with transmitters of several manufacturers.
    b. We installed the Nautel unit at KOTZ-AM, Kotzebue. The transmitter there is a DX-10, made by Harris Corporation of Quincy, Il. Over two weeks time we were unable to get DCC to operate properly. Examining the circuit diagrams we realized that modifications would have to be made to the transmitter that might, under certain conditions, cause failure of components.
    c. We then ordered a DCC unit from Harris for that transmitter. That unit arrived and was installed in the transmitter. Testing began in November.
    d. There were some technical difficulties with the new DCC installation on the AM transmitter. These have been overcome and the system is now operating. We should have a complete monthly billing cycle reflecting power savings in February, 2011.

KDLG-AM, Dillingham, initial installation and test:

a. The unit originally installed at KOTZ is now at KDLG in Dillingham. The Nautel DCC unit was tested at the Nautel factory on the exact model of the Nautel XR-12 unit used by KDLG-AM.
b. The KDLG Nautel transmitter has had the Nautel DCC equipment installed and there have been no problems with audio quality or decrease in coverage area.
c. The first utility bill with a full month of DCC use at the transmitter site shows a 26 percent decrease in electricity usage. This is well within expectations based upon the original engineering study. KDLG is projected to save approximately $10,500 over the course of a year.

There have been no complaints received about a decrease in audio quality or in the stations coverage with this new technology. Based upon these significant power savings, we are proceeding with obtaining permission from the FCC to convert the remaining stations (10 KW AMs) to this new Dynamic Carrier Control technology so that they will see comparable reductions in their transmitter site power bills.